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## **Ground-Water Contamination Area in Wolcott and Waterbury, Connecticut, Described in New USGS Report**

A scientific investigation by the U.S. Geological Survey (USGS), in cooperation with the Town of Wolcott and the U.S. Environmental Protection Agency (USEPA), has provided information on geology, ground-water flow, and water quality of an industrial area in Wolcott and Waterbury, Connecticut, where approximately 43 industries and 25 residences use ground water for industrial and domestic supply. The USGS study was done in conjunction with a USEPA investigation of the Nutmeg Valley Road Superfund Site, which has been listed on the USEPA National Priority List since 1989 because of contamination by volatile organic compounds (VOCs), metals, and cyanide.

The primary purpose of the USGS study, conducted during 1997-99, was to determine the hydrogeologic framework of the Nutmeg Valley area, including the direction of ground-water flow; the location, composition, and thickness of aquifers (water-bearing units); and the general water quality of the aquifers and streams. Several new techniques were used in the study, including vapor-diffusion sampling, and imaging and logging of bedrock wells. "Vapor-diffusion sampling is a relatively new technique that determines where ground water contaminated with VOCs is discharging to streams," said John Mullaney, USGS hydrologist and lead author of the report. "Borehole imaging and logging was used to determine the location and spatial orientation of fractures in bedrock wells. Fractures in bedrock aquifers are pathways for ground-water flow and contaminant transport," explained Mullaney. Data from this study will be useful to Federal, State, and local agencies as they focus future investigation efforts and determine the feasibility of remediating contaminated ground water and soils.

Copies of USGS Water-Resources Investigations Report 99-4081, titled "Hydrogeology and Water Quality of the Nutmeg Valley Area, Wolcott and Waterbury, Connecticut," by John R. Mullaney, Remo A. Mondazzi, and Janet Radway Stone, are available for viewing at government depository libraries, the Wolcott Public Library, and at the USGS Connecticut District Office (101 Pitkin St., East Hartford, CT 06108; (860) 291-6740). The report may be purchased for \$4.00 (plus shipping and handling) from the USGS, Branch of Information Services, Box 25286, Denver, CO 80225 or by calling 1-888-ASK-USGS.

As the nation's largest water, earth and biological science and civilian mapping agency, the USGS works in cooperation with more than 2,000 organizations across the country to provide reliable, impartial, scientific information to resource managers, planners, and other customers. This information is gathered in every State by USGS scientists to minimize the loss of life and property from natural disasters, contribute to the sound conservation, economic and physical development of the nation's natural resources, and enhance the quality of life by monitoring water, biological, energy and mineral resources.

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